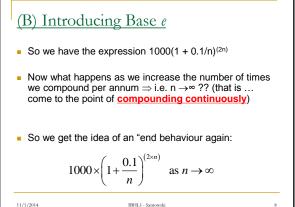
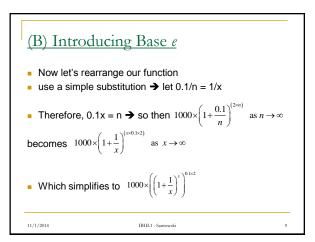


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(B) Introducing Base e Take \$1000 and let it grow at a rate of 10% p.a. Then determine value of the \$1000 after 2 years under the following compounding conditions: (i) compounded annually =1000(1 + .1/1)^(2x1) = 1210 (ii) compounded quarterly =1000(1 + 0.1/4)^(2x4) = 1218.40 (iii) compounded daily =1000(1 + 0.1/365)^(2x365) = 1221.37 (iv) compounded *n* times per year =1000(1+0.1/n)^(2w) = ????

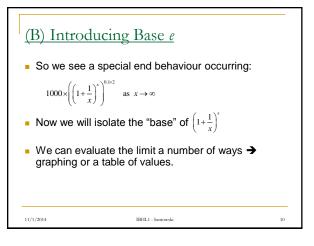
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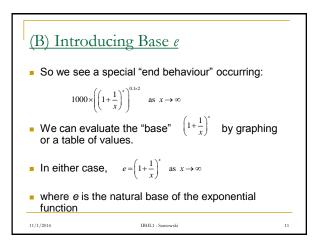


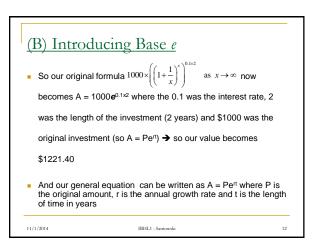


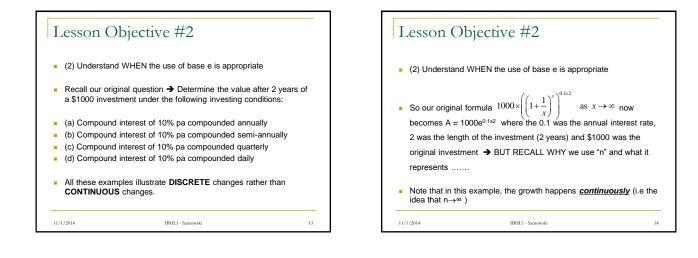
IBHL1 - Santowski

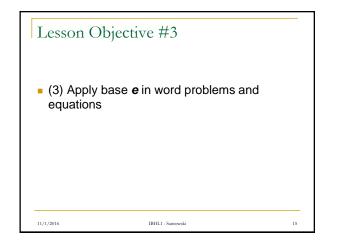
11/1/2014











(C) Working With Exponential Equations in Base **e** (i) Solve the following equations: (i) $e^{x^2-x} = e^2$ (ii) $(e^x)^2 = \sqrt{e^{x+2}}$ (ii) $e^{-x^2} = \left(\frac{1}{e}\right)^x$ (iv) $e^{2x \cdot 1} = \frac{1}{e^{3x+1}}$ (v) $e^x = 4$ (vi) $e^x = -5$

IBHL1 - Santowski

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 $(vii) e^x = 1 - x$

 $(viii) e^{2x} + 6 = 5e^{x}$

(C) Working with A = Pe^{rt}
So our formula for situations featuring continuous change becomes A = Pe^{rt} → P represents an initial amount, r the annual growth/decay rate and t the number of years
In the formula, if r > 0, we have exponential growth and if r < 0, we have exponential decay

